

## REMARKS

The Office Action dated October 18, 2005 has been received and carefully noted. No claim amendments have been made, and claims 1-15 remain pending in the present application. Therefore, the following remarks are submitted as a full, complete, and timely response to the Office Action.

Claims 1, 2, 4-9, and 11-15 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Spinney* (US Patent No. 5,414,704) in view of *Douceur* (US Patent No. 6,067,547). The Examiner has taken the position that *Spinney* teaches each and every element recited in the rejected claims, except for indexing, directly, the index portion to the corresponding bucket portion. However, the Examiner cites to *Douceur* as teaching directly indexing the index portion into the bucket, and as such, the Examiner concluded that it would have been obvious to one of ordinary skill in the art to have modified *Spinney* with the teaching of *Douceur*. Applicant traverses the rejection and respectfully submits that claims 1, 2, 4-9, and 11-15 recite subject matter that is neither shown, taught, or otherwise suggested by the cited combination of references.

Applicant's independent claim 1 recites a method of performing a table look-up in a network device. The method of the invention includes receiving a data packet through an input port of the network device, parsing the data packet into an index portion and a corresponding bucket portion, indexing, directly, the index portion to the corresponding

bucket portion, and processing address table information stored in an address look-up table using the bucket portion.

Applicant's independent claim 8 recites an address table look-up indexing device. The address lookup device includes a receiver portion of a port of a network device that receives an incoming data packet, a data parser that parses the data packet into an index portion and a corresponding bucket portion, an indexer that directly indexes the index portion to said bucket portion, an address lookup device that accesses an address look-up table using the corresponding bucket portion.

Applicant's independent claim 15 recites a network switch that includes multiple ports used for receiving and exporting data, each of the multiple ports being connected to one another through a communications medium. The network switch further comprises multiple Address Resolution Logic (ARL) devices, each of the multiple ARL devices being connected to one of the multiple ports, each of the multiple ports having a corresponding ARL device. Each of the multiple ARL devices includes a parser that parses data into an index portion and a corresponding bucket portion, an indexer that directly indexes the index portion to a corresponding bucket portion, and a look-up device that accesses table entries in a look-up table using said bucket portion

As will be discussed below, Applicant submits that *Spinney* and *Douceur* fail to teach, show, or otherwise suggest each of the elements recited in claims 1, 2, 4-9, and 11-15.

*Spinney* teaches address lookup in packet data communications link, using hashing and content-addressable memory. The process of *Spinney* is directed to performing source and destination address lookups, where the lookup operations use a combination of programmable hash algorithms, binary search algorithms, and small content-addressable memories (CAM).

*Douceur* teaches a method for hash table expansion and contraction for use with internal searching. In the invention of *Douceur*, hash tables are used to index into an internal database. The hash tables are segmented into a sequence of segments that increase geometrically in size, with the most recent segment added to the table being a base segment. To expand a hash table, an expansion segment (twice as large as the previous segment) is added to the base segment. As records are added to the hash table, entries from the base segments are gradually split, and some of the records referenced by these entries are assigned to new entries in the expansion segment.

With regard to the rejection of independent claim 1, the Examiner acknowledges in the Office Action that *Spinney* fails to teach indexing, directly, the index portion of the data packet into the corresponding bucket portion of the data packet. However, Applicant submits that *Douceur* also fails to teach, show, or suggest this feature. The Examiner cites to column 18, lines 21-26 of *Douceur* as teaching this feature, however, upon careful review of this section of *Douceur*, Applicant submits that the Examiner's reliance upon *Douceur* is misplaced. More particularly, Applicant submits that lines 18-26 of column 18 of *Douceur* describes a representation of a list of segments that could

avoid scanning through a linked list of segments through use of a pointer table/array with pointers corresponding to the hash table base segments. Each pointer links its corresponding hash table segment to a previously allocated hash table segment. Once a scan of the bit values of the address determines which segment contains the pointer to the appropriate list, the table/array can be directly indexed by this value to provide a pointer to the appropriate segment.

However, nowhere in the *Douceur*, including the section cited by the Examiner, is it taught, shown, or otherwise disclosed that an index portion of a data packet is indexed into a corresponding bucket portion of the same data packet. The section of *Douceur* that the Examiner refers to describes scanning bit values of the address to determine which hash table base segment contains a pointer to an appropriate list. The section further notes that table can be directly indexed by this value to provide a pointer to the appropriate segment. However, nowhere in *Douceur* does it teach, show, or suggest parsing a data packet into an index portion and a bucket portion, and then directly indexing the index portion into the bucket portion, as recited in Applicant's independent claim 1.

Thus, Applicant submits that independent claim 1 recites subject matter that is neither shown, taught, nor suggested by the cited combination of references. As such, reconsideration of the rejection of independent claim 1, along with dependent claims 2 and 4-7 is respectfully requested.

With regard to the rejection of independent claim 8, Applicant submits that the cited combination of references fails to teach, show, or suggest each and every limitation recited in the claim. More particularly, claim 8 recites an indexer that directly indexes and index portion into a bucket portion of a data packet, where the index and bucket portions are formed by a parser. As discussed above with regard to claim 1, neither *Spinney* nor *Douceur* teach directly indexing an index portion of a data packet into a corresponding bucket portion of the same data packet. Thus, reconsideration of the rejection of independent claim 8, along with dependent claims 9 and 11-14 is respectfully requested.

With regard to the rejection of independent claim 15, Applicant submits that the cited combination of references fails to teach, show, or suggest each and every limitation recited in the claim. More particularly, claim 15 recites a parser that parses a data packet into an index portion and a corresponding bucket portion, and an indexer that directly indexes the index portion to a corresponding bucket portion. As discussed above with regard to claims 1 and 8, neither *Spinney* nor *Douceur* teach directly indexing an index portion of a data packet into a corresponding bucket portion of the same data packet. Thus, reconsideration of the rejection of independent claim 15 is respectfully requested.

Therefore, Applicant submits that the cited combination of references fails to teach, show, or suggest each and every limitation recited in claims 1, 2, 4-9, and 11-15. As such, reconsideration of the rejection of claims 1, 2, 4-9, and 11-15 is respectfully requested.

Claims 3 and 10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Spinney* and *Douceur*, further in view of *Moreton* (US Patent No. 5,506,624). The Examiner has taken the position that *Spinney* and *Douceur* teach each and every limitation recited in claims 3 and 10, except for the step of indexing the index portion into the bucket portion using an XOR operation. However, the Examiner further takes the position that *Moreton* supplements the teachings of *Spinney* and *Douceur* by teaching an XOR operation in a hash table lookup operation. Applicant traverses the rejection and respectfully submit that claims 3 and 10 recite subject matter that is neither shown, taught, nor otherwise suggested by the cited combination of references.

As a preliminary matter, Applicant submits that claims 3 and 10 depend from claims 1 and 8, respectively. These claims have been argued as allowable above, and as such, Applicant submits that claims 3 and 10 are also allowable for being dependent upon an allowable base claim.

*Spinney* and *Douceur* are discussed above. *Moreton* teaches a computer-implemented method of transmitting images from a transmitter to a receiver, where a receiver maintains an image in a local storage and the transmitter receives an updated image for a next temporal period. The transmitter divides the updated image into blocks and compares a rotating pixel sample of each of the blocks from the updated image with a sampled pixel from a local copy of a receiver's image at a same spatial position of the pixel sample. The transmitter determines a difference between the rotating sampled pixel

of each of the blocks from the updated image and the local copy of the receiver's image. The comparison process includes and XOR comparison process.

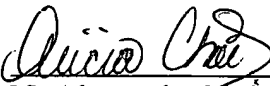
However, *Moreton* does not teach, show, or suggest parsing a data packet into an index portion and a bucket portion, and then directly indexing the index portion into the bucket portion, as recited in each of claims 3 and 10. As such, Applicant submits that *Moreton* fails to further the teachings of *Spinney* and *Douceur* to the level necessary to properly support a §103 rejection. Therefore, reconsideration and withdrawal of the rejection of claims 3 and 10 is respectfully requested.

In conclusion, Applicant submits that claims 1-15 recite subject matter that is not taught, shown, or otherwise suggested by the cited combination of *Spinney*, *Douceur*, and/or *Moreton*. Therefore, reconsideration and withdrawal of the rejection of claims 1-15 is respectfully requested.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the Applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

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